

REMARKS

The Office has raised certain obviousness concerns with respect to the Seidel (1997) reference. Unless a reference is a statutory bar, it may be removed and the rejection may be overcome by a showing that the reference was published by the Applicant himself. MPEP § 715.01(c); In re Facius, 408 F.2d 1396 (CCPA 1969). Please find attached as Attachment "T" to this response an affidavit from George Seidel, Ph.D., an author of the Seidel (1997) reference and inventor on the present application. Please note that the affidavit is directed to the subject matter of the present application and addresses the role of each co-author on the publication and each inventor on the present application. Note also the scope and form of the affidavit are the same as that of a similar affidavit successfully used in a parallel case of the present application for the same purpose of removing the Seidel (1997) reference. Accordingly, it is believed the affidavit is sufficient to remove the Seidel (1997) reference, and that the combinations of references cited that include the Seidel (1997) reference therefore may no longer support an obviousness rejection.

The Applicant notes that a number of the independent claims recite "separating nonhuman sperm cells based upon said sex characteristic and a rate of at least 1200 separations per second". The Office has raised certain obviousness concerns with respect to the Rens reference, wherein Rens is relied upon as teaching the Applicant's rates of separating sperm cells. As clarified in the interview, however, the sampling rates of Rens are not the same as the separation rates of the current claims. In this regard, it is important to realize the difference between the sample rate taught by Rens and the separation rate taught by the Applicant. A sample rate refers merely to the number of analysis events conducted each second, whereas a separation rate refers to the actual number of sperm separated each second. There are less sperm separated each second than are analyzed because not every analysis event yields a conclusion certain enough to warrant a separation. Importantly, Rens does not discuss any actual separation rates achieved at all. In this manner, it may be seen that Rens in fact does not teach the separation rates taught by the Applicant. Accordingly, the combinations of references relied upon by the Office cannot support an obviousness rejection with respect to Applicant's claims

reciting "separating nonhuman sperm cells based upon said sex characteristic and a rate of at least 1200 separations per second".

Additionally, please find attached as Attachment "II" to this response an affidavit from John Schenk, an inventor on the present application and one having at least ordinary skill in the art pertaining to sexing spermatozoa and producing animals from such spermatozoa. The affidavit makes clear that it is an unexpected result of the current invention to separate sperm at rates of at least 1200 separations per second, as discussed above, and still achieve fertilization success levels of at least 35% when using an artificial insemination sample having less than 50% the number of sperm than a typical unsorted artificial insemination sample, as set forth in the independent claims. Accordingly, the affidavit presents additional evidence tending to overcome the Office's obviousness concerns with respect to the Applicant's independent claims reciting "separating nonhuman sperm cells based upon said sex characteristic and a rate of at least 1200 separations per second".

A number of the independent claims do not include the recitation of "at least 1200 separations per second." However, these independent claims each contain features that are not taught by the combinations of references cited by the Office.

Independent claim 177 recites "a sheath fluid that contains a hepes buffered medium". None of the references cited by the Office teaches using a hepes buffered medium as a sheath fluid, nor do any of the combinations of references provide a suggestion that it would be advantageous to do so. By way of contrast, the specification from page 12, line 9 to page 14, line 9 teaches the use of a hepes buffered medium as a sheath fluid as being advantageous to chemically coordinate a sheath fluid in equine applications. Moreover, such use of a hepes buffered medium may be considered unexpected, in as much as the hepes substance originally was developed for bovine applications, as noted in the specification.

Independent claims 178 and 179 respectively teach "utilizing a collection container having a diameter of at least fifteen millimeters" and "utilizing a collection container having stream matched physical characteristics". None of the references cited by the Office teaches the

use of either of these kinds of collection containers, nor do any of the combinations of references provide a suggestion that it would be advantageous to do so. The Office has cited Rens at column 3 as rendering Applicant's collection containers obvious. However, it is noted that Rens at column 3 discusses only the dimensions of a nozzle used to orient sperm, and not the dimensions of collection containers used to collect sperm. Importantly, the nozzle of Rens at column 3 is used *during* the sorting process, whereas the collection containers described in the specification are used to collect sperm cells *after* they have been sorted. Accordingly, the specification from page 14, line 21 to page 16, line 3 teaches that using these types of collection containers can minimize physical damage to sperm cells when they are collected following sorting, thereby perhaps minimizing stress that may adversely affect sperm cell performance. This is different from the teaching of Rens, which suggests that the nozzle is useful for orienting sperm so as achieve a better sorting ability.

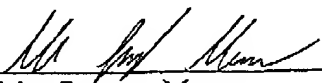
Finally, the Office has raised a number of enablement concerns. As discussed in the interview and enacted in the First Supplement, the Applicant's recitation of a "typical unsorted insemination dosage" in the independent claims is believed to address much of the enablement concerns. The Applicant believes any remaining enablement concerns are addressed by the affidavit from John Schenk. In particular, the affidavit establishes that the specification teaches the methods and apparatus necessary to enable a person of ordinary skill in the art pertaining to sexing spermatozoa and producing animals from such spermatozoa to accomplish the separation rates and success levels recited in the claims. Specific examples of such teachings from the specification are identified. Moreover, the affidavit establishes how a person of ordinary skill in the art would understand that the teachings of the specification are disclosed in a general fashion so that they may be applied to specific systems and applications once the general principles are understood, including in various combinations and permutations for use in a manner which may be optimized for performance based on species, separation techniques, goals, and other parameters involved in a specific processing application.

In as much as the present submission addresses issues discussed in the personal interview and is a supplement to the Request for Continued Examination, which was itself timely filed, it is believed that the present submission is presented in a timely manner. Consequently, the Applicant respectfully requests consideration of this Second Supplement in conjunction with the Request for Continued Examination filed on October 20, 2005.

Dated this 24 day of February, 2006.

Respectfully submitted,
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